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(54) Closure means for bait feeders

(57) Closure means for use with a fishing ground bait feeder is positionable to enable at least partial closure of one or more of the apertures 28 in the wall or walls of the feeder. The means preferably comprises a plurality of stoppers 30.

The bait feeder may comprise a hollow cylindrical body the ends of which are closeable by caps 16, 18 attachable to the open ends of the hollow cylindrical body, the body being further provided with a weight 20 releasably attachable thereto and means enabling attachment of the feeder to a fishing line.

FIG. 2.

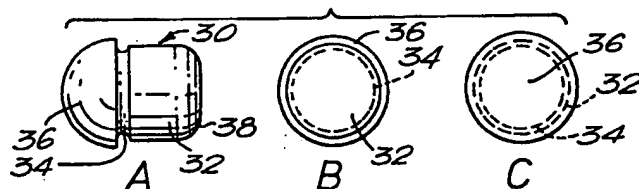
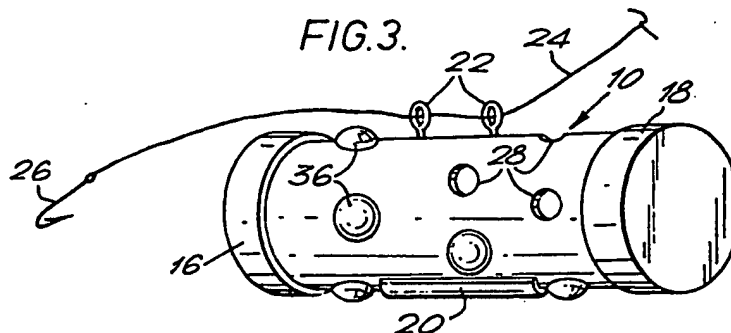


FIG. 3.



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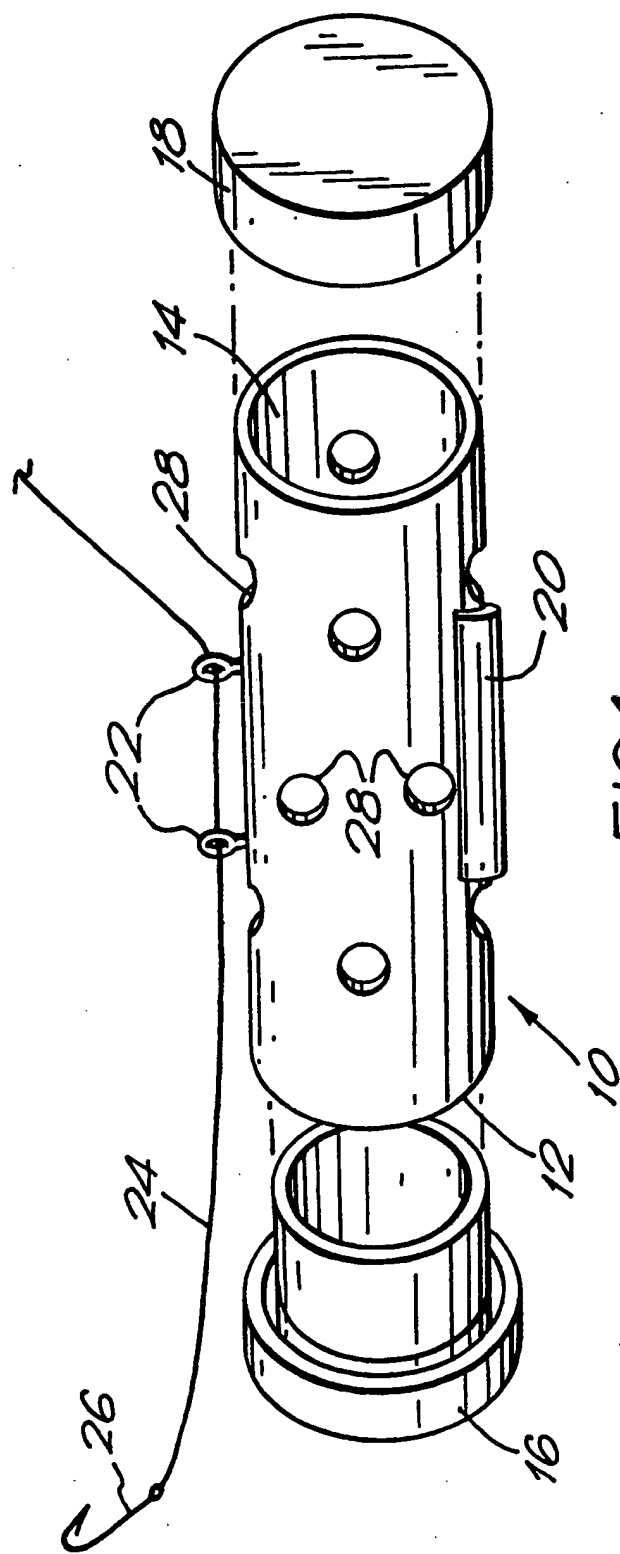
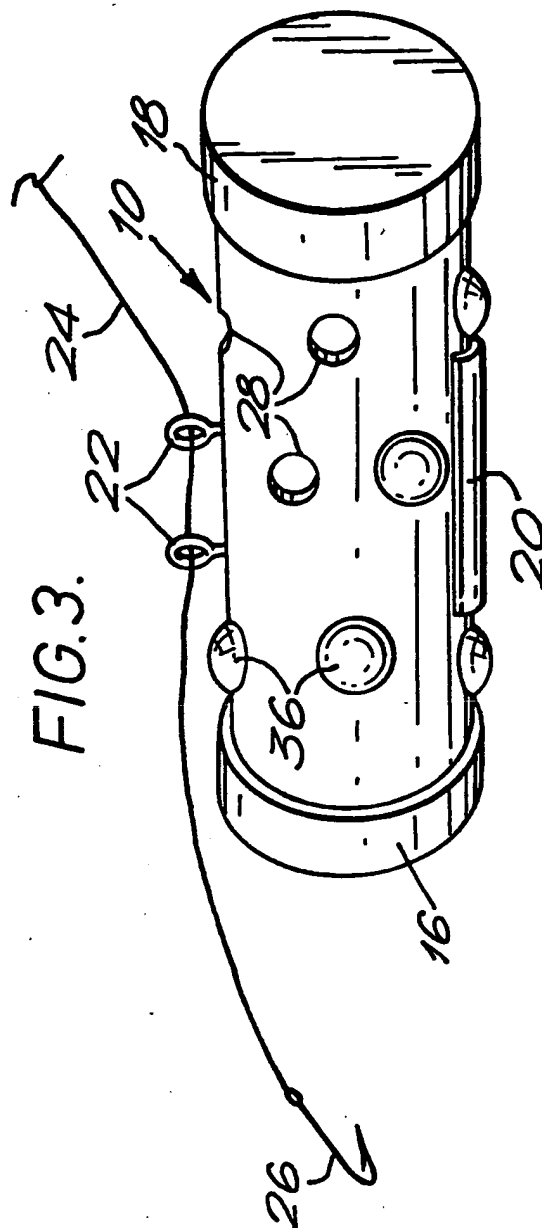
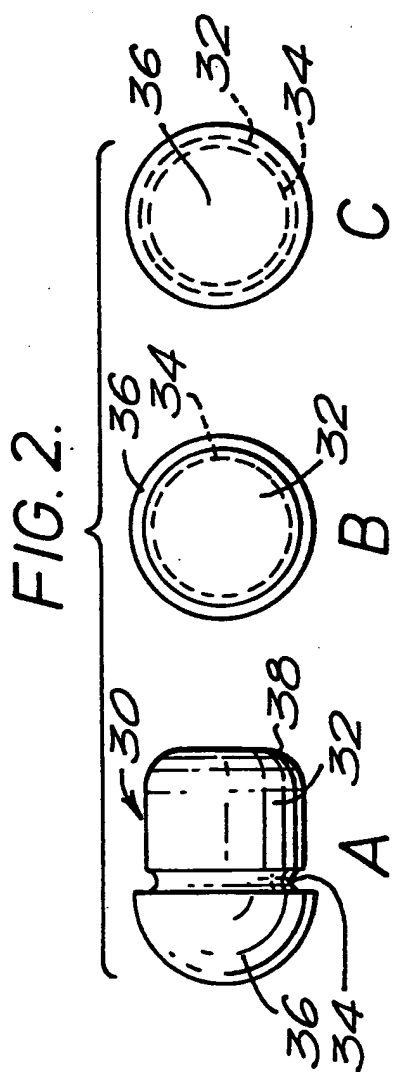


FIG.1.



BAIT FEEDERSDESCRIPTION

The present invention concerns bait feeders for use in fishing, more particularly the invention is concerned with ground bait feeders and closure means for use
5 therewith.

Conventionally ground bait feeders comprise a hollow body the wall or walls of which are pierced by a plurality of apertures. In the majority of cases such bait feeders comprise a hollow open ended cylindrical plastics
10 tube the wall of which is pierced by a plurality of circular apertures.

When a fisherman wishes to use such a ground bait feeder he fills it with bait and attaches the bait filled feeder to a fishing line adjacent a hook on the line.

15 The hook and feeder are then cast to carry the hook and feeder to the area that the fisherman wishes to fish.

The bait in the ground bait feeder percolates out of the feeder via the plurality of apertures in its wall or
20 walls and attracts fish to the area of the hook - the area being fished.

In order that the ground bait feeder may be

retained in the area to which it is to be cast it may be provided with a weight which tends to hold the feeder in the desired fishing position against the action of any current in the waters being fished.

5 The bait placed in the ground bait feeder will be that selected by the person fishing as most likely to attract fish to the area being fished and maybe any desired dead (e.g. bread) or live (e.g. maggots, worms) bait which may readily be placed in the bait feeder by the fisherman.

10 One difficulty which arises when using such bait feeders is that the bait may escape from the feeder - via the apertures in its wall or walls - before the bait feeder reaches the area being fished (that is to say while the bait feeder is still on the bank or, even, whilst the feeder is
15 in the air in the process of being cast to the area being fished).

 This difficulty is exacerbated in warm weather when the typical live bait which is used is particularly active. To reduce the effects of this difficulty the ends
20 of the ground bait feeder may be closed by caps. However, the rate of live bait escape via the apertures in the wall or walls of the feeder may still be more than the person fishing desires and is prepared to accept,

 Even if the bait located within the feeder is dead
25 (e.g. bread) it is possible that the rate of issuance of that bait from the bait feeder whilst the feeder is in location on the river bed may be more than the fisherman desires. This can be particularly the case when currents in the area being fished are quite high.

30 One proposal for overcoming this drawback of the known ground bait feeders is to provide a plurality of feeders having different sizes and/or numbers of apertures through bait may percolate - the fisherman selecting a particular form of bait feeder to suit the bait being used
35 and the ambient conditions. Such a proposal increases the number of articles a fisherman must buy and carry with him -

he will require a selection of different bait feeders to suit different fishing conditions and the bait he intends to use.

A first object of the invention is the provision
5 of means for use with a ground bait feeder which may be used to at least partially reduce the rate at which bait may escape from the ground bait feeder so that the rate of escape of bait therefrom may be controlled.

In one aspect the invention provides closure means
10 for use with a ground bait feeder, which feeder comprises a hollow member having a plurality of apertures therein through which bait within the hollow member may escape, said closure means being positionable to enable at least partial closure of one or more of the said apertures in the wall or
15 walls of the ground bait feeder.

The closure means preferably comprises a plurality of stopper members each of which is shaped and adapted to fully or partially close an aperture in a wall or walls of a ground bait feeder.

20 Desirably each stopper member is resilient and comprises a first portion the cross-sectional area of which is greater than the cross-sectional area of each said aperture in the wall or walls of the ground bait feeder, a second portion the cross-sectional area of which is
25 substantially the same as the cross-sectional area of each said aperture and a third portion the cross-sectional area of which is greater than both the cross-sectional area of each said aperture and the cross-sectional area of the said first portion.

30 The first, second and third portions of the stopper member are preferably generally circular in cross-section.

When such closure means are provided in combination with a ground bait feeder the material of which
35 the said stopper members and ground bait feeder are made are preferably the same; with advantage the material of the

ground bait feeder and the said stopper members is an acrylic or other suitable plastics material.

In a second aspect the invention provides a ground bait feeder comprising in combination a hollow body having a plurality of apertures formed in a wall or walls thereof and a plurality of stopper members each of which is shaped and adapted to at least partially close an aperture in said wall or walls of a ground bait feeder.

The feeder may comprise a cylindrical, circular in cross-section, body the open ends of which are closeable by caps attachable to those open ends.

The feeder may further comprise a weight member releasably attachable to the body of the bait feeder and means enabling attachment of the bait feeder to a fishing line.

Other aspects, features and advantages of the invention will become apparent from the following description of a ground bait feeder embodying the invention now made with reference to the accompanying drawings, in which:-

Figure 1 as an exploded view of a ground bait feeder embodying the invention,

Figure 2 shows to an enlarged scale at A, B and C, side and opposite end views respectively of a closure member embodying the invention, and

Figure 3 illustrates the feeder of Figure 1 when fitted with stopper members such as illustrated in Figure 2.

The bait feeder shown in the Figures comprises a hollow, circular in cross-section, cylindrical body of an acrylic or other suitable plastics material.

Body 10 has open ends 12 and 14 which are closeable, if desired by a fisherman, by caps 16 and 18 respectively. These caps may take any suitable form e.g. they may simply be friction fitted on ends of the cylindrical body 10 - by being pushed into (cap 16) or onto (cap 18) an end of body 10.

Body 10 may, if desired, be provided with a weight 20 releasably attached to body 10 as shown. Body 10 is preferably further provided with means such as shown at 22 enabling its releasable attachment to a fishing line 24 5 adjacent to a hook 26 on that line.

The wall of body 10 is pierced, as shown in the Figures, with a plurality or generally circular apertures 28 each of which has the same cross-sectional area.

To use the bait feeder described a person fishing 10 fills the feeder with a bait selected by him or her as that most likely to attract fish to the area being fished, attaches the bait feeder to the fishing line by use of the means 22 and casts it to the waters being fished. There the weighted bait feeder 10 falls with the line 24 to lie on the 15 bottom of the waters being fished.

The bait in the ground bait feeder passes out of the feeder through the apertures 28 (and through the ends 12 and 14 if the caps 16 and 18 have not been placed thereon). If the bait is inanimate it is carried out of the feeder 20 simply by the action of currents in the waters being fished. If the bait is live - for example maggots or worms - the percolation of the bait out of the feeder is enhanced by the movement of the bait itself. Once out of the ground bait feeder the bait rests on the bottom of the waters being 25 fished attracting fish to that area - the area adjacent the hook on the end of the fishing line.

As the bait leaves the feeder the feeder is retained in the area which it has been cast by its own weight - or, if it is fitted, by the additional weight 20 - 30 which acts to hold the feeder in position against any current in the waters being fished. In this way the bait leaving the ground bait feeder is retained in the area of the hook and the hook itself is not carried away from the area which has been seeded with ground bait.

35 As has been noted above a difficulty found when using live bait is that the maggots or worms may escape from

the feeder via the apertures 28 before the feeder reaches the area being fished. In extreme cases - notably when the ambient temperature is high - the maggots or worms begin to escape from the bait feeder as soon as the feeder has been
5 filled - that is to say while it is still on the bank by the fisherman. This escape of the live bait from the feeder may continue whilst the feeder is actually in the air - being cast to the area being fished.

By closing the ends of the cylindrical body (by
10 use of the caps 16 or 18) this problem may be reduced. However, even with these caps in place the rate of which maggots or other live bait may escape via the apertures 28 can still be significantly more than a person fishing is willing to accept.

15 A ground bait feeder embodying the present invention is further provided with closure means enabling at least partially closure of one or more of the apertures in the wall of the ground bait feeder.

In particular the ground bait feeder embodying the
20 present invention shown in the Figures provides this closure means in the form of stopper members 30 which may be used to stop one or more of the apertures 28.

Each stopper member 30 of this embodiment may be of any suitable resilient material (desirably they are of
25 the same acrylic or other plastics material from which the body 10 of the ground bait feeder is made) and has the specific form shown in detail in Figure 2.

As can be seen from Figure 2, each stopper member comprises a first or base portion 32, a second or neck
30 portion 34 and a third or head portion 36; each of circular cross-section.

The cross-sectional area of the base portion 32 of each stopper member 30 is slightly greater than the cross sectional area of the apertures 28 in which the stopper
35 members are adapted to be inserted whilst the cross sectional area of the neck portion 34 is substantially the

same as the cross sectional of those apertures. The cross sectional area of the head portion 36 of each stopper member 30 is greater than the cross sectional areas of both the apertures 28 and the base portion 32.

5 The end of the base portion 32 remote from head portion 36 is radiused as shown at 38.

 It will be seen that a stopper member 30 may be inserted in a aperture 28 simply by grasping the head portion of the stopper member between two fingers, locating
10 the leading - radiused - end 38 of the base portion 32 over an aperture 28 and pushing the stopper member 30 inwardly.

 The resilience of the material of which the stopper member is made permits the base portion 32 to compress by an amount allowing the stopper member 30 to pass
15 into the aperture 28 until the head portion 36 of the stopper member abuts the wall of the body 10 - that is to say until the neck portion 34 is surrounded by the material of the wall. The enlarged cross-section of the head portion 36 prevents further inward movement of the stopper
20 member 30 relative to the body 10 of the bait feeder.

 It is possible to place stopper members in this way into several of the apertures 28 thereby stopping escape of bait via those apertures.

 It will be appreciated that if the bait used more
25 readily percolates from the ground bait feeder than is desired a person fishing will - with the apparatus of the invention - stop up one or more of the apertures 28 thereby reducing to a lesser or greater extent the rate at which bait leaves the ground bait feeder. If a person fishing is
30 using a live bait which is particularly active a he will block up rather more apertures 28 than if the bait is less active.

 If it is desired to remove one or more stopper members and thereby increase the rate at which bait may
35 leave the ground bait feeder the person fishing simply removes an end cap 16 or 18 (if fitted) and by inserting a

finger into the central portion of the ground bait feeder can push outwardly against the radiused ends 38 of the base portions 32 and once again the resilience of material of the stopper member 30 permits the radial compression of base portion 32 by an amount allowing the stopper member 30 to pass out of the aperture 28.

To improve the looks of the ground bait feeder with the stopper members fitted - and to decrease the resistance to flow of water past the ground bait feeder - the head portions 36 of the stopper members are preferably fully radiused as shown at 40.

As so far described the apparatus of the invention comprises the combination of the ground bait feeder and the stopper members but it will be appreciated that the invention is encompassed by stopper members per se shaped and adapted to fit into and at least partially close the apertures in a conventional ground bait feeder.

It will be seen that the apparatus described provides a relatively simple solution to a problem met by persons fishing without need for a plurality of different ground bait feeders having different sizes and/or numbers of apertures through bait may percolate.

It will further be appreciated that the described embodiment is merely one way of putting the invention into effect and that many variations may be made to the ground bait feeder described without departing from the scope of the invention.

Whilst the ground bait feeder is said to comprise a hollow, cylindrical circular in cross-section, member it will be seen that any other suitable configuration may be used (spherical, cubical or the like). Again, if a cylindrical member is used it need not be circular in cross section but may have any desired polygonal cross section. The material of the ground bait feeder need not be plastics - any other suitable material may be used for its manufacture.

Again as described each stopper member is integrally formed of the material used to form the body of the ground bait feeder and this may be varied without departing from the scope of the present invention. Each
5 stopper member may be made of two or more materials - if desired - for decorative or practical purposes (e.g. ease of manufacture) and, if made of a single material, this may differ from that used to form the ground bait feeder.

The described stopper members are generally
10 circular in cross section to fit circular apertures and it will be seen that if apertures of other shapes are used the configuration of the stopper members may be varied to suit the shape of those apertures.

Again, if the material of the ground bait feeder
15 is sufficiently resilient the stopper members may be of a relatively stiff material as compression of the base portions will not be required - the material of the ground bait feeder distorting as the stopper member is pushed into or out of its operative position.

20 As an alternative to completely stopping the apertures in the ground bait feeder wall it is envisaged that stopper members may be provided which only partially close the apertures into which they are inserted - that is to say the stopper members may be provided with holes
25 extending axially therealong such that the stopper member acts as a partial constriction rather than a complete closure.

Whilst as described the ground bait feeder may be provided with a detachable weight to hold the ground bait
30 feeder in position against any current in the waters being fished it is possible for the weight to be incorporated in the body of the ground bait feeder or to be permanently attached to thereto.

The means for attachment of the feeder to a
35 fishing line may be as described or provided in any other suitable way - e.g. by means of a single, swivel mounted,

eye member provided at one end of the body of the bait feeder.

As described the ground bait feeder may be provided with caps at both ends thereof and it will be appreciated that a single aperture may be provided for insertion of bait into the ground bait feeder - which may or may not be provided with a cap of the forms shown or any other suitable form (eg. screw threaded for engagement with a complementary threaded end of body 10).

10 Other methods of closing or constricting the apertures in the wall or walls of the ground bait feeder may be utilised - e.g. closure of constriction members attached or attachable to the inner or outer surfaces of the wall or walls of the ground bait feeder and movable to a position
15 stopping one or more of the apertures 28. If attached permanently to the ground bait feeder the closure or constriction members may be hingeably or slideably carried on the wall or walls of the ground bait feeder.

CLAIMS

1. Closure means for use with a ground bait feeder, which feeder comprises a hollow member having a plurality of apertures formed in a wall or walls thereof through which bait within the hollow member may escape, said closure means being positionable to enable at least partial closure of one or more of said apertures in said wall or walls of the ground bait feeder.

2. Means as claimed in Claim 1, comprising a plurality of stopper members each of which is shaped and adapted to fully or partially close an aperture in said wall or walls of a ground bait feeder.

3. Means as claimed in Claim 2 wherein each stopper member is resilient and comprises a first portion the cross-sectional area of which is greater than the cross-sectional area of each said aperture in said wall or walls of the ground bait feeder, a second portion the cross-sectional area of which is substantially the same as the cross-sectional area of each said aperture and a third portion the cross-sectional area of which is greater than both the cross-sectional area of each said aperture and the cross-sectional area of the said first portion.

4. Means as claimed in Claim 3 where in the first, second and third portions of the stopper member are generally circular in cross-section.

5. Closure means as claimed in any one of claims 2 to 4 in combination with a ground bait feeder, wherein the material of said stopper members and the ground bait feeder is the same.

6. Closure means and a ground bait feeder as claimed

in Claim 5, wherein the material of the ground bait feeder and the said stopper members is an acrylic or other suitable plastics material.

7. A ground bait feeder comprising the combination of a hollow body having plurality of apertures formed in a wall or walls thereof and a plurality of stopper members each of which is shaped and adapted to at least partially close an aperture in a wall or walls of a ground bait feeder.

8. A feeder as claimed in Claim 7, comprising a hollow cylindrical body the ends of which are closeable by caps attachable to the open ends of the hollow cylindrical body.

9. A feeder as claimed in Claim 7 or Claim 8, further comprising a weight member releasably attachable to the body of the bait feeder and means enabling attachment of the bait feeder to a fishing line.

10. Closure means for a ground bait feeder as claimed in Claim 1 and substantially as hereinbefore described with reference to Figure 2 of the accompanying drawings.

11. A ground bait feeder as claimed in Claim 7 and substantially as hereinbefore described with reference to Figures 1, 2 and 3 of the accompanying drawings.